

Ambient Air Monitoring Report

**Rivermines
Park Hills, Missouri**

The Doe Run Company

Third Quarter 2012

OTCR

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Ambient Air Monitoring Report

***Rivermines
Park Hills, Missouri***

The Doe Run Company

Third Quarter 2012



*1001 Diamond Ridge Suite 1100
Jefferson City, MO 65109
Phone: (573) 638-5000
Fax: (573) 638-5001*

January 4, 2013

Mr. Mark Nations
The Doe Run Company
P.O. Box 1633
Desloge, Missouri 63601

Re: Ambient Air Monitoring Report – Rivermines Site

Dear Mr. Nations:

Please find attached the Third Quarter 2012 “*Ambient Air Monitoring Report*” for The Doe Run Company at the Rivermines Sites, located near Park Hills, Missouri.

This report will include the following:

- **Glossary of Terms** – Listing of the abbreviations used for each parameter and unit.
- **National Ambient Air Quality Standards** – Lists the maximum allowable concentrations for the measured parameters.
- **Quarterly Missing Data Summary** – Listing of missing particulate run days.
- **Quarterly Data Summary** – Includes the averages of each monitored parameter, which relates to the federal standard.

Barr Engineering Company offers this report as an independent laboratory. This includes the weighing of filters, obtaining lead and cadmium analysis, compiling the data, and preparing the report. No interpretation of the data or analysis of the results is implied or intended. Should you have any questions regarding this report, please call.

Respectfully,



Richard J. Campbell, PE
Chemical Engineer
Senior Environmental Consultant

c: Ms. Kathy Rangen
Mr. Jason Gunter
Mr. Ty Morris

GLOSSARY OF TERMS

$\mu\text{g}/\text{m}^3$	Micrograms per Cubic Meter
TSP	Total Suspended Particulate
PM ₁₀	Particulate Matter - 10 Microns or Less
mmHg	Millimeters of Mercury

NATIONAL AMBIENT AIR QUALITY STANDARDS (NAAQS)

PM ₁₀ – Particulate Matter	24-Hour*	Annual Maximum	150 $\mu\text{g}/\text{m}^3$
Lead	Calendar Quarter	Arithmetic Mean	1.5 $\mu\text{g}/\text{m}^3$

TSP (Total Suspended Particulate) – There are no Federal Standards that apply solely for TSP.

*This standard must be exceeded more than once a year to constitute a violation.

QUARTERLY MISSING DATA SUMMARY

TSP/Lead Summary

Elvins Rivermines Site #3 WTP – 7/02/2012 – INVALID – Mechanical Failure

All Sites – 7/04/2012 – Holiday – No samples scheduled

Elvins Rivermines Site #1 – 8/30/2012 – Blank Filter QA

All Sites – 9/03/2012 – Holiday – No samples scheduled

Elvins Rivermines Site #1 – 9/27/2012 – INVALID – Electrical Failure

Elvins Rivermines Site #2 – 9/28/2012 – Blank Filter QA

PM₁₀ Summary

Elvins Rivermines Site #1 – 8/30/2012 – Blank Filter QA

All Sites – 9/03/2012 – Holiday – No samples scheduled

Big River #4 – 9/21/2012 – INVALID – Mechanical Failure

Elvins Rivermines Site #1 – 9/27/2012 – INVALID – Electrical Failure

Elvins Rivermines Site #2 – 9/28/2012 – Blank Filter QA

Particulate and Lead Quarterly Summary



TSP and Lead Concentration Summary

Rivermines
Park Hills, Missouri

2012

Date	TSP Big River #4 ($\mu\text{g}/\text{m}^3$)	TSP South #1 ($\mu\text{g}/\text{m}^3$)	TSP North #2 ($\mu\text{g}/\text{m}^3$)	TSP East #3 ($\mu\text{g}/\text{m}^3$)	LEAD Big River #4 ($\mu\text{g}/\text{m}^3$)	LEAD South #1 ($\mu\text{g}/\text{m}^3$)	LEAD North #2 ($\mu\text{g}/\text{m}^3$)	LEAD East #3 ($\mu\text{g}/\text{m}^3$)
7/2/12	54	41	36	INVALID	0.068	0.031	0.061	INVALID
7/3/12	71	66	53	57	0.045	0.026	0.030	0.031
7/5/12	71	92	58	89	0.050	0.110	0.049	0.048
7/6/12	47	40	32	37	0.034	0.042	0.013	0.019
7/9/12	44	38	32	33	0.011	0.031	0.000	0.009
7/10/12	40	37	33	34	0.012	0.038	0.008	0.009
7/11/12	44	37	32	34	0.013	0.013	0.000	0.007
7/12/12	36	25	23	25	0.020	0.008	0.000	0.000
7/13/12	28	16	14	39	0.020	0.006	0.000	0.025
7/16/12	20	25	20	17	0.011	0.011	0.050	0.012
7/17/12	43	54	30	39	0.035	0.040	0.049	0.042
7/18/12	64	73	37	41	0.056	0.077	0.011	0.037
7/19/12	76	94	32	42	0.083	0.191	0.000	0.069
7/20/12	53	62	28	33	0.023	0.252	0.006	0.014
7/23/12	45	34	34	40	0.028	0.012	0.035	0.041
7/24/12	58	60	36	46	0.048	0.062	0.016	0.028
7/25/12	39	53	41	56	0.014	0.043	0.090	0.073
7/26/12	26	43	25	53	0.024	0.087	0.032	0.082
7/27/12	32	43	28	29	0.011	0.024	0.007	0.048
7/30/12	88	83	49	55	0.082	0.254	0.034	0.059
7/31/12	69	45	36	35	0.057	0.086	0.050	0.018
Monthly Average	50	50	34	42	0.035	0.069	0.026	0.034

QUARTERLY LEAD NAAQS LIMIT: $1.5 \mu\text{g}/\text{m}^3$

Please see the particulate analysis sheets for explanations of missing or invalid data.

Note: A summary of the Big River #4 sampler data is also included, because it was part of the QA plan.



TSP and Lead Concentration Summary

Rivermines
Park Hills, Missouri

2012

Date	TSP Big River #4 ($\mu\text{g}/\text{m}^3$)	TSP South #1 ($\mu\text{g}/\text{m}^3$)	TSP North #2 ($\mu\text{g}/\text{m}^3$)	TSP East #3 ($\mu\text{g}/\text{m}^3$)	LEAD Big River #4 ($\mu\text{g}/\text{m}^3$)	LEAD South #1 ($\mu\text{g}/\text{m}^3$)	LEAD North #2 ($\mu\text{g}/\text{m}^3$)	LEAD East #3 ($\mu\text{g}/\text{m}^3$)
8/1/12	44	46	40	46	0.028	0.056	0.037	0.027
8/2/12	33	27	43	30	0.026	0.008	0.085	0.012
8/3/12	40	41	34	35	0.012	0.073	0.020	0.016
8/6/12	29	37	31	23	0.017	0.094	0.096	0.006
8/7/12	31	28	25	24	0.013	0.017	0.025	0.010
8/8/12	41	70	35	39	0.024	0.201	0.027	0.061
8/9/12	34	82	24	31	0.015	0.268	0.000	0.007
8/10/12	18	64	14	18	0.009	0.293	0.007	0.011
8/13/12	43	133	26	46	0.029	0.533	0.008	0.145
8/14/12	39	79	18	25	0.041	0.290	0.013	0.016
8/15/12	58	29	31	27	0.044	0.015	0.064	0.007
8/16/12	39	44	37	44	0.033	0.079	0.050	0.084
8/17/12	27	25	19	20	0.019	0.022	0.000	0.023
8/20/12	50	80	22	30	0.029	0.260	0.013	0.031
8/21/12	52	60	33	50	0.039	0.067	0.030	0.070
8/22/12	63	69	38	46	0.046	0.433	0.035	0.176
8/23/12	66	64	44	62	0.063	0.094	0.036	0.039
8/24/12	48	44	43	47	0.019	0.016	0.048	0.037
8/27/12	35	83	30	30	0.030	0.341	0.030	0.027
8/28/12	48	44	37	31	0.017	0.060	0.007	0.010
8/29/12	60	43	34	31	0.048	0.094	0.006	0.012
8/30/12	33	28	25	28	0.012	0.024	0.008	0.014
8/31/12	15	14	13	13	0.000	0.000	0.000	0.000
Monthly Average	41	54	30	34	0.027	0.145	0.028	0.037

QUARTERLY LEAD NAAQS LIMIT: 1.5 $\mu\text{g}/\text{m}^3$

Please see the particulate analysis sheets for explanations of missing or invalid data.

Note: A summary of the Big River #4 sampler data is also included, because it was part of the QA plan.



TSP and Lead Concentration Summary

Rivermines
Park Hills, Missouri

2012

Date	TSP Big River #4 ($\mu\text{g}/\text{m}^3$)	TSP South #1 ($\mu\text{g}/\text{m}^3$)	TSP North #2 ($\mu\text{g}/\text{m}^3$)	TSP East #3 ($\mu\text{g}/\text{m}^3$)	LEAD Big River #4 ($\mu\text{g}/\text{m}^3$)	LEAD South #1 ($\mu\text{g}/\text{m}^3$)	LEAD North #2 ($\mu\text{g}/\text{m}^3$)	LEAD East #3 ($\mu\text{g}/\text{m}^3$)
9/4/12	34	44	27	30	0.013	0.031	0.000	0.008
9/5/12	37	36	27	32	0.048	0.064	0.022	0.010
9/6/12	33	26	24	27	0.015	0.024	0.041	0.011
9/7/12	20	17	17	17	0.000	0.000	0.015	0.000
9/10/12	28	16	12	19	0.032	0.020	0.009	0.009
9/11/12	41	20	18	19	0.049	0.000	0.017	0.008
9/12/12	33	25	23	27	0.017	0.006	0.033	0.019
9/13/12	37	31	29	33	0.010	0.019	0.006	0.011
9/14/12	38	26	21	19	0.012	0.015	0.006	0.006
9/17/12	19	53	12	22	0.013	0.109	0.000	0.022
9/18/12	31	61	9	11	0.048	0.286	0.000	0.017
9/19/12	22	18	27	17	0.010	0.006	0.105	0.008
9/20/12	68	64	32	36	0.071	0.049	0.010	0.038
9/21/12	32	34	35	31	0.011	0.011	0.090	0.012
9/24/12	29	49	27	26	0.016	0.145	0.076	0.009
9/25/12	32	34	30	29	0.016	0.020	0.067	0.018
9/26/12	11	11	11	13	0.006	0.012	0.009	0.000
9/27/12	26	INVALID	25	26	0.008	INVALID	0.000	0.000
9/28/12	27	34	27	25	0.038	0.038	0.032	0.022
Monthly Average	31	33	23	24	0.023	0.048	0.028	0.012
Quarterly Average	41	46	29	33	0.028	0.087	0.027	0.027
QUARTERLY LEAD NAAQS LIMIT: 1.5 $\mu\text{g}/\text{m}^3$								

Please see the particulate analysis sheets for explanations of missing or invalid data.

Note: A summary of the Big River #4 sampler data is also included, because it was part of the QA plan.

PM₁₀ Quarterly Summary



Particulate Summary

Rivermines
Park Hills, Missouri

2012

Date	PM ₁₀ Big River #4 ($\mu\text{g}/\text{m}^3$)	PM ₁₀ South #1 ($\mu\text{g}/\text{m}^3$)	PM ₁₀ North #2 ($\mu\text{g}/\text{m}^3$)	PM ₁₀ East #3 ($\mu\text{g}/\text{m}^3$)	PM ₁₀ NAAQS ($\mu\text{g}/\text{m}^3$)
2-Jul	24	21	19	17	150
5-Jul	39	43	30	37	150
8-Jul	20	21	21	33	150
11-Jul	26	25	24	23	150
14-Jul	10	7	6	8	150
17-Jul	17	25	19	19	150
20-Jul	23	37	19	19	150
23-Jul	31	32	23	28	150
26-Jul	15	26	16	26	150
29-Jul	14	11	11	10	150
Monthly Average	22	25	19	22	

Please see the particulate analysis sheets for explanations of missing or invalid data.

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Particulate Summary

Rivermines
Park Hills, Missouri

2012

Date	PM ₁₀ Big River #4 ($\mu\text{g}/\text{m}^3$)	PM ₁₀ South #1 ($\mu\text{g}/\text{m}^3$)	PM ₁₀ North #2 ($\mu\text{g}/\text{m}^3$)	PM ₁₀ East #3 ($\mu\text{g}/\text{m}^3$)	PM ₁₀ NAAQS ($\mu\text{g}/\text{m}^3$)
1-Aug	23	28	28	28	150
4-Aug	23	23	22	24	150
7-Aug	17	20	20	12	150
10-Aug	10	35	8	10	150
13-Aug	15	56	12	15	150
16-Aug	28	21	25	23	150
19-Aug	15	14	13	14	150
22-Aug	25	27	21	23	150
25-Aug	16	14	15	18	150
28-Aug	21	24	20	21	150
31-Aug	9	10	9	9	150
Monthly Average	18	25	18	18	

Please see the particulate analysis sheets for explanations of missing or invalid data.

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Particulate Summary

Rivermines
Park Hills, Missouri

2012

Date	PM ₁₀ Big River #4 ($\mu\text{g}/\text{m}^3$)	PM ₁₀ South #1 ($\mu\text{g}/\text{m}^3$)	PM ₁₀ North #2 ($\mu\text{g}/\text{m}^3$)	PM ₁₀ East #3 ($\mu\text{g}/\text{m}^3$)	PM ₁₀ NAAQS ($\mu\text{g}/\text{m}^3$)
6-Sep	21	17	18	18	150
9-Sep	7	8	7	9	150
12-Sep	21	17	16	16	150
15-Sep	12	12	11	12	150
18-Sep	10	37	6	6	150
21-Sep	INVALID	16	19	15	150
24-Sep	19	28	20	19	150
27-Sep	15	INVALID	17	16	150
30-Sep	21	23	23	21	150
Monthly Average	16	20	15	15	
Quarterly Average	19	23	17	18	

Please see the particulate analysis sheets for explanations of missing or invalid data.

Note: A summary of the Big River #4 sampler data is also included, because it was part of the QA plan.

Quarterly Quality Control



120 East Davis Street
P.O. Box 30
Fayette, MO 65248-0030

Phone: (660) 248-1911
Fax: (660) 248-1921
<http://www.inovatia.com>

ANALYSIS REPORT

Client Information:

Barr Engineering
5150 W. 76th Street
Edina, MN 55439

Project Name: Quarterly QC Samples
Quarter-Year: Q3-2012
Sample Matrix: Filter

Analysis Method: 40 CFR §58 Appendix A/40 CFR §50 Appendix G

Lab Number	Observed Value	Actual Value	Difference		% Difference		Standard Deviation	95% Probability Limit (+)	95% Probability Limit (-)	Analyst-Date
	(µg Pb/Filter)	(µg Pb/Filter)	(+/-)	(%)	Average (%)					
20A	19.012	20	-0.988	-4.940%						DS-07/06/12
20B	19.026	20	-0.974	-4.870%						DS-08/23/12
20C	20.394	20	0.394	1.970%	-2.613%	3.969%	5.167%	-10.393%		DS-09/24/12
60A	57.227	60	-2.773	-4.622%						DS-07/06/12
60B	61.186	60	1.186	1.977%						DS-08/23/12
60C	61.360	60	1.36	2.267%	-0.126%	3.896%	7.510%	-7.762%		DS-09/24/12

Submitted by:

Jennifer Vandelicht
Quality Assurance

Digitally signed by Jennifer
Vandelicht
DN: cn=Jennifer Vandelicht,
o=Inovatia Laboratories, LLC,
ou=Quality Assurance,
email=jvandelicht@inovatia.com,
c=US
Date: 2012.09.26 08:36:01 -05'00'

09/26/2012
Date

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